

No. 667,372.

Patented Feb. 5, 1901.

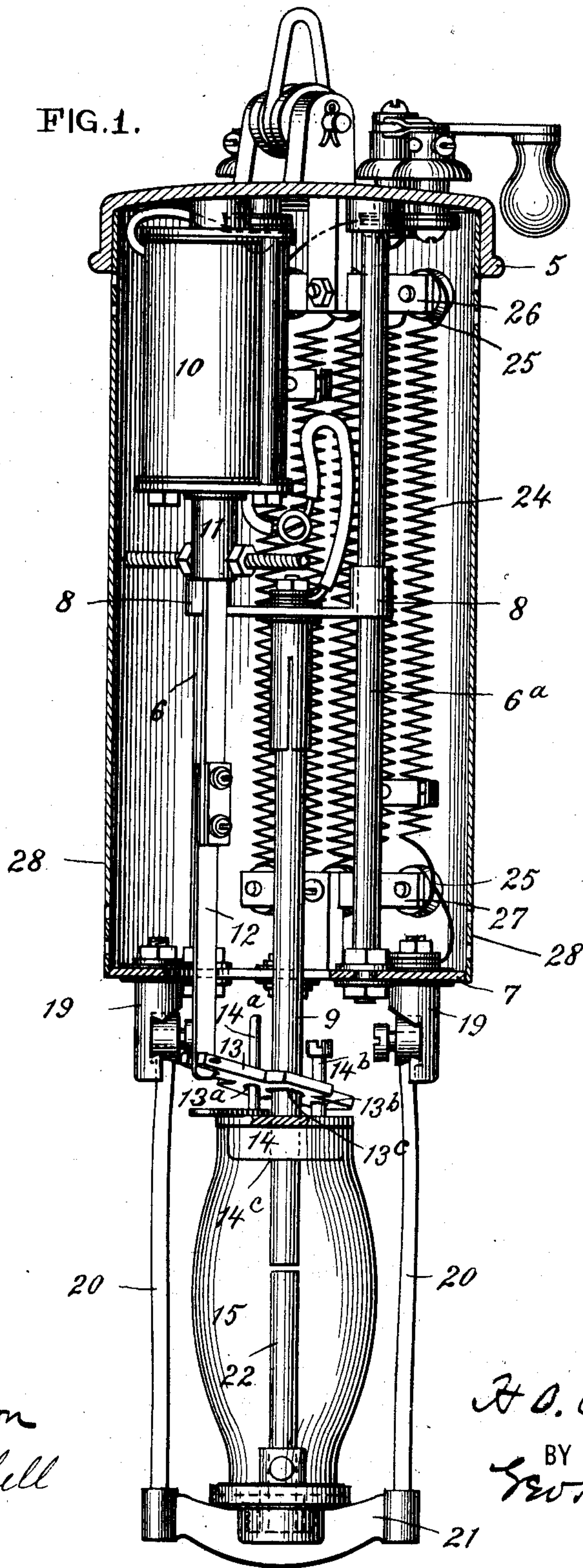
H. O. SWOBODA.  
ELECTRIC ARC LAMP.

(Application filed June 15, 1900.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



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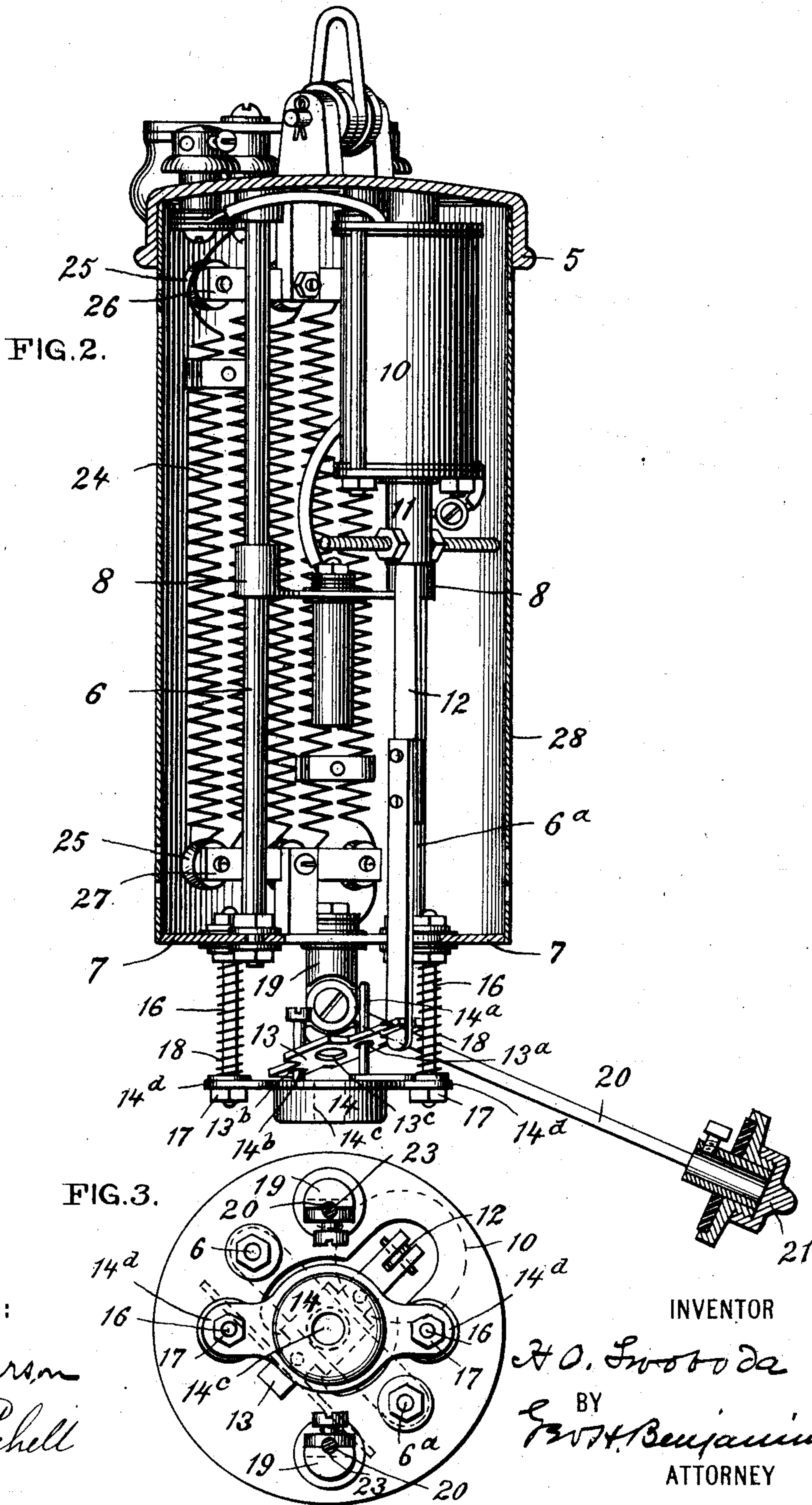
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# UNITED STATES PATENT OFFICE.

HANS OTTO SWOBODA, OF NEW YORK, N. Y.

## ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 667,372, dated February 5, 1901.

Application filed June 15, 1900. Serial No. 20,471. (No model.)

*To all whom it may concern:*

Be it known that I, HANS OTTO SWOBODA, a citizen of the United States, residing at New York city, county and State of New York, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention relates to various features of construction, which will be described in the specification and specified in the claims.

The object of my invention is to simplify and reduce the cost of construction of inclosed arc-lamps.

The accompanying drawings will serve to illustrate my invention, and in which similar numerals represent corresponding parts.

Figure 1 is a longitudinal section. Fig. 2 is a longitudinal section taken at right angles to Fig. 1. Fig. 3 is a bottom view of Fig. 2.

In the drawings, 5 represents the top plate or cover of the lamp, carrying the usual suspending device and switch. Depending from the top plate are the rods 6 6<sup>a</sup>. Supported by these rods is a bottom plate 7. The rods 6 6<sup>a</sup> may be secured to the top and bottom plates in any suitable manner. Mounted so as to slide vertically on the rods 6 6<sup>a</sup> is a yoke 8, which carries the upper carbon 9. Depending from the top plate 5 is a solenoid 10, having the armature 11. Connected to the armature 11 is a rod 12, adjustable in length and pivotally connected at its lower end to a clutch-plate 13. The clutch-plate 13 has formed in it three openings 13<sup>a</sup> 13<sup>b</sup> 13<sup>c</sup>.

14 is a gas-cap elastically mounted above the top of the inclosing globe 15. Projecting upward from the top of the gas-cap are two studs 14<sup>a</sup> 14<sup>b</sup>, respectively located in the openings 13<sup>a</sup> and 13<sup>b</sup> of the clutch-plate 13. The gas-cap has a central opening 14<sup>c</sup>. The upper carbon 9 is inserted in the opening 13<sup>c</sup> of the clutch-plate and 14<sup>c</sup> of the gas-cap. The gas-cap 14 is also provided on its top with the lateral perforated projections or ears 14<sup>d</sup>, Fig. 3.

The gas-cap as a whole is supported by the rods 16, depending from the plate 7, which pass through the openings in the lateral projections 14<sup>d</sup> and have nuts 17 on their lower ends. Arranged around each rod 16 and between the base-plate 7 of the lamp and the lateral projections of the gas-cap are

springs 18, which tend to resist the upward movement of the gas-cap.

Depending from the plate 7 on each side of the lamp are brackets 19, and pivoted in these brackets are the rods 20, connected at their lower ends to the cross-piece or yoke 21, which supports the lower carbon 22. The brackets 19 are cut away on their inner faces and have grooves 23 formed therein, in which the rods 20 lie when the parts are in the position shown in Fig. 1. The rods 20 are preferably made of spring metal, so that by their resiliency they exert an outward pressure in opposite directions against the inner faces of the brackets 19.

Instead of making the rods of resilient metal any suitable spring device may be used to press the rods 20 against the sides and into the grooves of the brackets 19.

The pivotal connection for the support of the lower carbon and globe permits the globe to be readily removed by swinging the parts to the position shown in Fig. 2.

Located within the casing which contains the operating mechanism of the lamp is a wire resistance 24, which consists of a coiled wire mounted on insulators 25, which are carried on supports 26 27, respectively connected to the top and bottom plates. 28 represents a perforated casing which incloses the operating mechanism.

The operation of my device will be readily understood. The upper carbon 9 feeds down by gravity. When a current is sent through the lamp, the outer end of the clutch-plate is lifted, causing it to bite upon the upper carbon, thereby lifting the upper carbon in its movement. As consumption of the carbon takes place the clutch-plate is moved gradually downward, releasing its bite on the carbon and allowing it to feed.

Having thus described my invention, I claim—

1. In an electric-arc lamp, the combination with the bottom plate of the inclosing casing for the actuating mechanism, of brackets depending therefrom, resilient rods pivoted in said brackets and exerting side pressure thereon, and a cross-piece or yoke connecting the lower ends of said rods.

2. In an electric-arc lamp, the combination



with the bottom plate of the inclosing casing for the actuating mechanism, of brackets depending therefrom, said brackets slotted upon their inner and opposing faces, resilient rods  
5 pivoted in said brackets, and a cross-piece or yoke connecting the lower ends of said rods.

3. In an electric-arc lamp, the combination with the bottom plate of the inclosing casing for the actuating mechanism, of brackets de-  
10 pending therefrom, resilient rods pivoted in sockets in the inner and opposing faces of said brackets, and a cross-piece or yoke connecting the lower ends of said rods.

4. In an electric-arc lamp, the combination  
15 with the inclosing casing for the actuating mechanism, a resiliently-mounted gas-cap, an inclosing globe, and a pivotally-mounted supporting device for the inclosing globe.

5. In an electric-arc lamp, the combination  
20 of a resiliently-mounted gas-cap, a clutch mechanism mounted on said gas-cap, and means for actuating said clutch mechanism.

6. In an electric-arc lamp, the combination  
25 of a resiliently-mounted gas-cap, a pair of studs projecting upward from said gas-cap, a clutch-plate having openings to receive the

upper carbon, and the studs projecting from the gas-cap, and electrically-actuated means for lifting the end of the clutch-plate.

7. In an electric-arc lamp, the combination  
30 of a gravitally-acting vertically-movable support for the upper carbon, a resiliently-mounted gas-cap, clutch mechanism mounted on said gas-cap, and electrical means independent of the carbon-support for actuating  
35 the clutch mechanism.

8. In an electric-arc lamp, the combination with the bottom plate of the inclosing casing for the actuating mechanism, of brackets de-  
40 pending therefrom, pivoted rods supported by said brackets, a cross-piece connecting the ends of the rods, rods depending from said bottom plate, a gas-cap, and resilient devices interposed between said gas-cap and said bot-  
45 tom plate.

In testimony whereof I affix my signature in the presence of two witnesses.

HANS OTTO SWOBODA.

Witnesses:

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